

**AN ANALYSIS OF STUDENT PERCEPTIONS AND
EXPECTATIONS OF CAPSTONE COURSES IN
THE COLLEGE OF AGRICULTURAL
SCIENCES AND NATURAL
RESOURCES**

By

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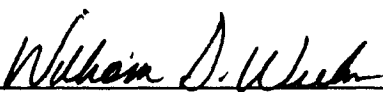
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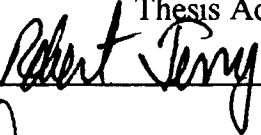
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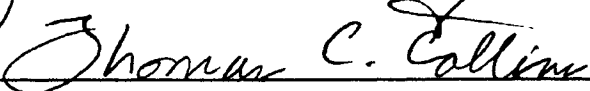
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CHAPTER I

INTRODUCTION

During the past few years there has been a significant increase in the level of concern regarding the measurement of student outcomes in the classroom. Most of this concern appears to be directly connected with the movement to make educators more accountable (Decker, 1992).

Some colleges are experimenting with programs that introduce seniors to situations they may confront in the world of work. Other institutions are developing seminars and "capstone" courses that aim to pull together the themes of a student's major (Magner, 1990).

Realizing the difficulty involved in evaluating the content of a discipline at the senior level, it is necessary to constantly assess the effectiveness of a program in order to assure that student needs are being met. Therefore, an important factor in evaluation of students is to provide effective capstone courses through outcomes assessment.

According to the Policy Statement on the Assessment of Students (OSRHE, 1991):

The Oklahoma State Regents for Higher Education has a responsibility for prescribing standards for admission, retention, and graduation applicable to each

institution in The Oklahoma State System of Higher Education. They also have a responsibility to provide leadership in the coordination of the orderly transfer of students between and among institutions of the State System. Inherent in such responsibilities is the prescribing of mechanisms to monitor and facilitate the assessment of students for purposes of instructional improvement and State System accountability. Accountability to the citizens of Oklahoma is important. The public has both the need and right to know that their tax dollars are being used wisely, and most importantly, producing tangible, measurable outcomes of learning for individual students enrolled within the State System (p. 1).

Statement of the Problem

Many academic programs within the College of Agricultural Sciences and Natural Resources use capstone courses to draw together the undergraduate experiences. Within Oklahoma State University, little if any research relative to the utilization of capstone courses has been conducted; therefore, this research effort should prove to be beneficial regarding recommendations which may be in order to assist in more effective evaluation capstone courses.

In order for the College of Agricultural Sciences and Natural Resources at Oklahoma State University to better serve its student population, it is important to analyze the capstone courses currently being used by academic major programs.

Purpose of the Study

The purpose of this study was to analyze selected aspects of capstone courses as perceived by undergraduate students within the College of Agricultural Sciences and Natural Resources.

Objectives of the Study

To accomplish the purpose of the study, the following objectives were established:

1. To describe the student demographic characteristics;
2. To describe the students' expectations of the capstone courses;
3. To describe students' perceptions of the capstone course which they were enrolled in;
4. To describe characteristics the students perceive to be most valuable in their capstone course;
5. To describe characteristics the students perceive to be least valuable in their capstone course; and,
6. To describe if the student would change anything about the capstone course.

Scope of the Study

This study included all undergraduates enrolled in the capstone courses within the College of Agricultural Sciences and Natural Resources at OSU during the Spring 1994 academic semester. The Departments teaching those courses were Agricultural Economics, Animal Science, Forestry, Landscape Architecture, and Entomology. The list of undergraduates was provided by the Associate Dean's Office of Academic Affairs and the instructors of the capstone courses.

Definition of Terms

The following terms are defined as they pertain to this study and are presented as follows:

1. Capstone course - A course that provides an opportunity to reassess previously identified deficiencies and would most appropriately come at the end of the candidate's subject matter course sequence.
2. Assessment - A full range of activities from identification of programmatic objectives to implementation of continuous program improvement.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The purpose of this chapter is to present a review of literature which was related to this study. The intent of this study was to analyze capstone courses as perceived by undergraduate students within the College of Agricultural Sciences and Natural Resources, Oklahoma State University. The review of literature is subdivided into the following areas: (1) overview of assessment, (2) purpose of assessment, (3) capstone courses, and (4) benefits to students.

Overview Of Assessment

Since the late 1980's assessment has become a regularly-used term in education. Increasing numbers of public institutions at all educational levels are currently under mandate from state legislatures to develop assessment programs (Davis, 1989). Also, the

institutional accreditation process is now requesting assessment of student achievement. Moreover, assessment has become the key word to understanding student achievement and the programs that meet student needs.

One of the most profound changes in recent years is the shift from the traditional quantitative assessment techniques (pre- and post- tests) to a qualitative approach to gathering data for improvement in programs or courses (Goetz & LeCompte, 1989). The qualitative technique utilizes students as the primary information source. The qualitative approach to assessment offers a practical and more productive source of evaluating what actually takes place during a course, including the appraisal of the course itself, and instructional procedures and content (Guba & Lincoln, 1981). The Oklahoma State Regents for Higher Education wrote a Policy Statement on the Assessment of Students (OSRHE, 1991) which stated:

The purpose of assessment is to maximize student success through the assessment process by the systematic gathering, interpretation, and use of information about student learning/achievement to improve instruction. The results of assessment contribute to and are an integral part of the institution's strategic planning and program review process to improve teaching and learning. It is also one mechanism to monitor the effectiveness of the State's System of Higher Education. Finally, student assessment is designed to contribute to assuring the integrity of college degrees, and other educational activities/goals, to increasing the retention and graduate rates of college students, to enhancing the quality of campus life in

general, and to encouraging high school students to improve their academic preparation for college (p. 1).

The University Assessment Program at Oklahoma State University was established in 1991 in response to the Oklahoma State Regents for Higher Education (OSRHE) mandate that all colleges and universities under its auspices conduct an ongoing and comprehensive assessment of programs and services. The purposes include the following: providing a basis for making program improvements; providing a means of providing public assurance of program quality and accountability; and providing a basis for a periodic report documenting progress toward meeting institutional and programmatic objectives.

The program was and continues to be, funded by revenue generated from \$1.00 per credit hour fee paid by both undergraduate and graduate students enrolled at OSU. In order to develop an assessment plan specific to OSU that would serve these purposes and make effective use of assessment funds, the Provost and Vice President for Academic Affairs appointed a Director of University Assessment and charged him with organizing an Assessment Council comprised of faculty, administration, and student representatives. The University Assessment Council (UAC) was established and began the task of developing an overall institutional assessment plan in September of 1991.

In accordance with the OSRHE mandate, assessment was planned at four levels of student progress through a degree program. The four areas to be assessed were: entry level competencies, mid level skills including academic progress in general education, program outcomes attainment, and student satisfaction.

The Undergraduate General Education Committee at Oklahoma State University (1991) asked colleges to adopt a procedure of review and dialogue in regard to the capstone experience. The College of Agricultural Sciences and Natural Resources at OSU met the general education capstone requirement by allowing Departments to plan courses or adapt existing courses.

Purpose of Assessment

No formal definition of assessment has found general agreement, but while flexibility and innovative experiment dominate the field, a body of philosophy has come into focus. The purpose is to effect improvement in classroom instruction and to evaluate student performance or the degree of students' optimal attainment commensurate with native ability (Chandler 1986). Educational assessment, in short, is the act of acquiring and analyzing information about students for the purpose of planning and presenting information.

In the past, too much of educational assessment was based on prediction (Tyler, 1975). Today, students' continuing development must be considered in light of their needs prior to and during the course or program. The most traditional way to enhance students' learning is through coursework (Erwin, 1991). Astin (1984) has hypothesized that the greater the students' involvement in college, the more the student gains and learns. Involvement applies to student effort and diversity of experiences in and outside of the classroom.

Capstone Courses

Spurred by critics who say too many graduates lack a sense of ethics and have unreasonably high job expectations, more colleges are designing courses and programs to prepare seniors for the "real world" (Magner, 1990). The capstone course goes beyond providing a valuable opportunity for students. According to Batell (1983):

It draws together the total previous learning experiences of the students and focuses these on continuing personal development and lifelong learning. This course does this by the students identifying, formulating, and sharing questions authentic to themselves and exploring, developing, and sharing creative responses to their questions (p. 94).

The majority of those who enroll are seniors who typically have had a variety of courses prior to taking this course. While the capstone experience provides a myriad of opportunities for the student to apply previous knowledge and assess growth in the desirable characteristics, it also ideally initiates continued focus on life goals (Batell, 1983).

The Undergraduate General Education Committee at Oklahoma State University (1991) recommended that each student be required to complete a course designated as a capstone course. Such courses should involve an investigation of the relationships of the major field of study with other disciplines and society in general. These courses should include active learning activities, group discussions, writing, speaking, and problem

solving exercises. Students should have completed a minimum of 100 hours toward their degree prior to enrolling in a capstone course. The following guidelines were set for the capstone courses:

- (1) The capstone course(s) will be required of all majors and should be taught at least once per year.
- (2) The capstone experience should encourage breath of vision and broad perspective of a focused specialization for graduating students.
- (3) The capstone experience should examine the place of the discipline in the context of the core themes of General Education.
- (4) The capstone experience should explore the specialized field in relationship to its wider implications for an educated life.
- (5) The capstone experience should stimulate expression of thought through extensive writing and through the search for answers to questions formulated by the student.
- (6) The capstone experience should promote the acquisition of liberal education.
- (7) The capstone experience should be taught in small groups to facilitate discussion and writing.

Benefits to Students

The challenge of a capstone course is to enable students to understand the real-world workings and how they can use what they have learned in the undergraduate program to affect change in their choices. Such a course is intended to challenge the

students to evaluate and assess their tools and emphasize a project in which the student seeks actively to apply knowledge and techniques learned earlier in order to bring about some outcome (Wallace, 1988).

Field research is well established as an effective way to learn material and build confidence (Bonwell & Eison, 1991). Students find that such an experience can serve as a synthesizing experience. They can put information learned from a variety of courses to practical use.

In the Design for Choicemakers Program (Batell, 1983) the senior seminar is meant to be a synthesizing process in the lives of students, Batell states:

We have in effect designed a loom in which the student, with assistance from the faculty and staff, is enabled to weave a tapestry of education suited to their own personal and professional goals within the framework of what we consider a liberally educated person to be. We recognize that the student may not realize the full meaning of our educational program by the time of graduation. Nevertheless, having learned the discipline and practiced the process within their undergraduate experience, they will be able to continue the process of liberal learning throughout their lifetime (p. 3).

Summary

Assessment is the responsibility of all instructors. Information gained from the assessment process is vital to the learning process (Patton, 1987). Promoting the involvement of students, providing avenues for discussion of students' needs, and determining the level of students' knowledge aid in constructing a solid base for learning and assessment in higher education. In the drive toward academic excellence, assessment assists students and instructors in reaching the goal of successful learning in the classroom.

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

The purpose of this chapter is to illustrate the methods used and the procedures followed in conducting this study. In order to collect data which would provide information relating to the purpose and objectives of this study, the population was determined and the instrument was developed for data collection. A procedure was established and methods of data analysis were selected. Information was collected during the spring semester of 1994.

Institutional Review Board (IRB)

Federal regulations and Oklahoma State University policy require review and approval of all research studies that involve human subjects before investigators can begin their research. The Oklahoma State University Research Services and the IRB conduct this review to protect the rights and welfare of human subjects involved in biomedical and

behavioral research. In compliance with the aforementioned policy, this study received the proper surveillance, was granted permission to continue, and was assigned the following number: AG-94-017.

Population

The population of this study consisted of all 106 undergraduates enrolled in capstone courses within the College of Agricultural Sciences and Natural Resources, Oklahoma State University, during the Spring 1994 academic semester. The population was provided by the Associate Dean's Office for Academic Affairs and the instructors of the capstone courses. The Department of Agricultural Economics had 49 students, Animal Science had 30 students, Forestry had 17 students, Landscape Architecture had 8, and Entomology had 2 students.

Selection and Development of the Instrument

The first step in the preparation of an instrument to meet the objectives of the study was to review and evaluate the instruments used in related studies. In analyzing various methods of data gathering, the questionnaire was determined to be the most appropriate to meet the study objectives. A list of general questions was compiled that were relevant to undergraduate student perceptions of capstone courses. Questions 4 through 9 were based upon the guidelines set forth by the College of Agricultural Sciences and Natural Resources.

The second step was to make the necessary revisions and then test the applicability and continuity of the questions to be used. In this process the questionnaire was field tested utilizing graduate students enrolled in Agricultural Education 6100 during the Spring 1994 academic semester. Finally, the researcher strengthened the questionnaire, based on comments and suggestions for revisions, and then concluded the questionnaire was ready to be administered.

In its final form, most of the questions on the questionnaire utilized the forced-response format that provided the students several options regarding choice. This format allowed data of a quantitative nature to be obtained, thereby facilitating analysis of the data. There were also several open-ended questions on the questionnaire which were designed to obtain qualitative responses. The final form of this questionnaire may be found in Appendix A.

Collection of Data

Once the courses were selected, phone calls were made to the instructors of the capstone courses for consideration of participation in the research questionnaire project. Once permission was given, copies of the questionnaire were hand delivered to the students' by the researcher during the appropriate class meeting. An oral consent form (Appendix B) was read to the students, prior to giving the test, which requested the students cooperation, explained the nature of the research, and assured them of their anonymity. It is important to note that it was left to the discretion of the respondents regarding whether or not to respond to any or all of the questions on the instrument. The

responses were totally voluntary. The method of hand delivery of the questionnaire was deemed appropriate and with the basic assumption that it might perhaps assure a higher percentage of students responding to this research initiative. Since the questionnaire was given during the month of April, the researcher assumed that students were evaluating and/or assessing the capstone course. The researcher returned to the Landscape Architecture capstone course three (3) times in order to survey each student. This particular class allows for a larger time span in which the students can attend class.

Analysis of Data

A record was kept of the qualitative information collected from the survey instrument. This information was analyzed by the researcher and reported in narrative format. Quantitative data from the questionnaire were analyzed utilizing descriptive statistics which primarily included frequency distribution, percentages, and means. The statistical package "SPSS" was utilized for all data analysis by the researcher.

For question number 10 the students were asked to give a Likert-type response. In order to establish a meaningful interpretation of the mean reported the following real limits were established: 1.00 to 1.49 = more effective; 1.50 to 2.49 = effective; 2.50 to 3.49 = no different; 3.50 to 4.49 = ineffective; 4.50 to 5.00 = totally ineffective.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this chapter is to report the results from the questionnaire used to conduct the study. The purpose of the study was to analyze capstone courses as perceived by undergraduate students within the College of Agricultural Sciences and Natural Resources, Oklahoma State University.

The scope of this study included a population of 106 undergraduate students enrolled in a capstone course in the College of Agricultural Sciences and Natural Resources during the Spring semester of 1994. Of the 106 students receiving a questionnaire, all 106 (100.00 percent) chose to respond.

Table I reports the distribution of respondents by gender. Sixty-six (62.26 percent) were male and forty (37.70 percent) were female.

TABLE I
DISTRIBUTION OF RESPONDENTS BY GENDER

GENDER	FREQUENCY	%
Male	66	62.3
Female	40	37.7
Total	106	100.0

Reported in Table II is the distribution of respondents based on major. Of the 106 respondents who answered this question, 49 (46.22 percent) were majors in the Department of Agricultural Economics, 30 (28.3 percent) were majors in the Department of Animal Science, 17 (16.03 percent) were majors in the Department of Forestry, 8 (7.54 percent) were majors in the Department of Landscape Architecture, and 2 (1.88 percent) were majors in the Department of Entomology.

TABLE II
DISTRIBUTION OF RESPONDENTS BY MAJOR

MAJOR	FREQUENCY	%
Agricultural Economics	49	46.2
Animal Science	38	28.0
Forestry	17	16.0
Landscape Architecture	8	7.5
Entomology	2	1.9
Total	106	100.0

Reported in Table III is the distribution of respondents based on hours completed toward degree program. Of the 106 respondents, 77 (72.64 percent) had completed more than 111 hours, 26 (24.52 percent), answered 91-110 hours, and 2 (1.88 percent), answered 61-90 hours.

TABLE III
DISTRIBUTION OF RESPONDENTS BY HOURS COMPLETED

HOURS COMPLETED	FREQUENCY	%
>111 hours	78	72.6
91-110 hours	26	24.5
61-90 hours	2	1.9
Total	106	100.0

Illustrated in Table IV is the distribution of respondents' expectations of the capstone course to help them gain the ability to plan and/or organize. One-hundred six respondents answered this question. Of these, 78 (72.6 percent) answered "yes", they did expect to gain the ability to plan and/or organize. Twenty-eight (26.42 percent) answered "no", they did not expect to gain the ability to plan and/or organize.

TABLE IV
RESPONDENTS' EXPECTATIONS OF THE CAPSTONE
COURSE TO HELP THEM GAIN THE ABILITY
TO PLAN AND/OR ORGANIZE

RESPONSE	FREQUENCY	%
Yes (Did expect)	78	72.6
No (Did not expect)	28	26.4
Total	106	100.0

Table V was devised to report the distribution of respondents' expectations of the capstone course to provide them with the ability to solve problems and make decisions. Of the 106 respondents, 71 (67.0 percent) answered "yes", they did expect to obtain the ability to solve problems and make decisions. Thirty-five (33.0 percent) answered "no", they did not expect to obtain the ability to solve problems and make decisions.

TABLE V
RESPONDENTS' EXPECTATIONS OF THE CAPSTONE COURSE
TO PROVIDE THEM WITH THE ABILITY TO SOLVE
PROBLEMS AND MAKE DECISIONS

RESPONSE	FREQUENCY	%
Yes (Did expect)	71	67.0
No (Did not expect)	35	33.0
Total	106	100.0

Indicated in Table VI is the distribution of respondents' by expectations of the capstone courses to help them gain the ability to work with people in groups or teams. Of the 106 respondents, 61 (57.54 percent) answered yes, they did expect to gain the ability to work with people in groups or teams. Forty-five (42.5 percent) answered no, they did not expect to gain the ability to work with people in groups or teams.

TABLE VI
RESPONDENTS' EXPECTATIONS OF THE CAPSTONE COURSE
TO HELP THEM GAIN THE ABILITY TO WORK
WITH PEOPLE IN GROUPS OR TEAMS

RESPONSE	FREQUENCY	%
Yes (Did expect)	61	57.5
No (Did not expect)	45	42.5
Total	106	100.0

Reported in Table VII is a summary of respondents' expectations of the capstone course to help them gain an understanding of the philosophical foundations associated with their academic major speciality area. One-hundred six respondents answered this question. Of these, 72 (67.0 percent) answered "yes" and 34 (32.1 percent), answered "no".

TABLE VII

**RESPONDENTS' EXPECTATIONS OF THE CAPSTONE COURSE TO HELP
THEM GAIN AN UNDERSTANDING OF THE PHILOSOPHICAL
FOUNDATIONS ASSOCIATED WITH THEIR ACADEMIC
MAJOR SPECIALTY AREA**

RESPONSE	FREQUENCY	%
Yes (Did expect)	72	67.0
No (Did not expect)	34	32.1
Total	106	100.0

Indicated in Table VIII is the distribution of respondents' expectations of the capstone course to help them gain a broad perspective of their degree program. Of the 106 respondents, 70 (66.0 percent) answered "yes", they did expect to gain a broad perspective of their degree program. Thirty-six (34.0 percent) answered "no", they did not expect to gain a broad perspective of their degree program.

TABLE VIII

**RESPONDENTS' EXPECTATIONS OF THE CAPSTONE COURSE
TO HELP THEM GAIN A BROAD PERSPECTIVE
OF THEIR DEGREE PROGRAM**

RESPONSE	FREQUENCY	%
Yes (Did expect)	70	66.0
No (Did not expect)	36	34.0
Total	106	100.0

Table IX was devised to report the distribution of respondents expectations of the capstone course to explore job opportunities in their degree. Sixty-eight (64.2 percent) answered "yes", they did expect the course to explore job opportunities. Thirty-eight (35.8 percent) answered "no", they did not expect the course to explore job opportunities.

TABLE IX
RESPONDENTS' EXPECTATIONS OF THE CAPSTONE
COURSE TO EXPLORE JOB OPPORTUNITIES
IN THEIR DEGREE

RESPONSE	FREQUENCY	%
Yes (Did expect)	68	64.2
No (Did not expect)	38	35.8
Total	106	100.0

Illustrated in Table X is the distribution of respondents expectations of the academic department to offer a quality capstone course that draws together their total learning experience. Of the 106 respondents, 69 (63.2 percent) answered "yes", they did expect the department to offer a quality capstone course. Thirty-seven (34.9 percent) answered "no", they did not expect the department to offer a quality capstone course.

TABLE XI
DESCRIPTIVE ANALYSIS OF RESPONDENTS RATING
OF THE CAPSTONE COURSE AS COMPARED
TO OTHER COURSEWORK

RESPONSE	FREQUENCY	%
More effective (1)	13	12.3
Effective (2)	43	38.7
No different (3)	18	17.0
Ineffective (4)	18	17.0
Totally ineffective (5)	14	13.2
Total	106	100.0
Mean	2.80	
S.D.	1.26	

Item number 12 on the questionnaire, reported in Table XII asked the respondents what they expect to be the most valuable thing provided by the capstone course. Thirty-eight (36.2 percent) chose "presentations," that included responses such as "getting in front of people" and "public speaking," while twenty-three (21.91 percent) selected "applying knowledge to real life situations," which included such things as "to get a taste of real life work situations." Fifteen (14.29 percent) chose "job opportunities," and twelve (11.42 percent) selected "group participation." Ten (9.52 percent) chose "guest speakers," and five (4.76 percent) selected "research." Only two (1.9 percent) chose "miscellaneous."

TABLE XII
RESPONDENTS' ASSESSMENT OF THE MOST VALUABLE
ASPECTS OF THE CAPSTONE COURSE

ASPECTS	FREQUENCY	%
Student Presentations	38	36.2
Applying knowledge to real life situations	23	21.9
Job opportunities	15	14.3
Group participation	12	11.4
Guest speakers	10	9.5
Research	5	4.8
Miscellaneous	2	1.9
Total	105	100.0

Item number 13 on the questionnaire, reported in Table XIII asked the respondents what they expect to be the least valuable thing provided by the capstone course. Twenty (31.75 percent) selected "presentations," that included responses such as "individual presentations," and "group presentation: could have been a simple presentation," while thirteen (20.64 percent) chose "more discussion about job opportunities," which included responses like "the tips about interviews." Nine (14.29 percent) selected "class meetings," and eight (12.69 percent) chose "current issues." Seven (11.11 percent) selected "projects" and six (9.52 percent) chose "group participation" to be the least valuable thing provided by the capstone course.

TABLE XIII
RESPONDENTS' ASSESSMENT OF THE LEAST VALUABLE
ASPECTS OF THE CAPSTONE COURSE

ASPECTS	FREQUENCY	%
Student Presentations	20	31.8
Inadequate discussion of job opportunities	13	20.6
Class meetings	9	14.3
Current issues	8	12.7
Projects	7	11.1
Group participation	6	9.5
Total	63	100.0

Item number 14 on the questionnaire, reported in Table XIV elicited the respondents' opinion concerning changes desired to be made in the capstone course. Seventeen (23.95 percent) selected "course format," which did include such responses as "totally redesign or do away with all together", and "not make it a required course", while fourteen (19.72 percent) chose "class meetings", which included responses such as "time" and "less class meetings." Thirteen (18.31 percent) selected "projects" which responses were "the group project" and "not be given fixed projects" and nine (12.67 percent) chose "instructor" that included such responses as "the instructor." Six (8.45 percent) chose "presentations" and "cancel the class." While four (5.63 percent) selected "group participation," and only two (2.82 percent) chose "no changes."

The last item on the questionnaire asked for a qualitative response, which can be found in Appendix F.

TABLE XIV

RESPONDENTS' SUGGESTIONS CONCERNING CHANGES
DESIRED TO BE MADE IN THE CAPSTONE COURSE

ASPECTS	FREQUENCY	%
Change course format	17	24.0
Fewer class meetings	14	19.7
Different projects	13	18.3
Change instructor	9	12.7
Fewer presentations	6	8.4
Cancel the class	6	8.4
More group participation	4	5.6
No changes	2	2.8
Total	71	100.0

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this chapter is to present brief summaries of the following topics: purpose of the study; objectives of the study; scope of the study; and major findings of the research. Conclusions and recommendations derived from detailed observation of the findings are also presented.

Purpose Of The Study

The purpose of this study was to analyze capstone courses as perceived by undergraduate students within the College of Agricultural Sciences and Natural Resources.

Objectives of the Study

To accomplish the purpose of the study, the following objectives were established:

1. To describe the student demographic characteristics;
2. To describe the students' expectations of the capstone courses;
3. To describe students' perceptions of the capstone courses which they were enrolled in;
4. To describe characteristics the students perceive to be most valuable in their capstone courses;
5. To describe characteristics the students perceive to be least valuable in their capstone courses; and,
6. To describe if the student would change anything about the capstone courses.

Scope of the Study

This study included all 106 undergraduates enrolled in capstone courses within the College of Agricultural Sciences and Natural Resources at OSU during the Spring 1994 academic semester.

Summary of Findings

Revealed in Table XV are the student demographic characteristics. Of the 106 respondents, 62.26 percent were male.

A large majority of the respondents were from the Department of Agricultural Economics (46.2 percent). Thirty (28.3 percent) were from the Animal Science Department and 17 (16.0 percent) were from Forestry.

A formidable majority (72.6 percent) of the respondents had completed more than 111 hours toward their degree program. Twenty-six (24.5 percent) were between the hours of 91-110.

TABLE XV
STUDENT DEMOGRAPHIC CHARACTERISTICS

CHARACTERISTICS	N	%
Gender		
Male	66	62.3
Major		
Agricultural Economics	49	46.2
Animal Science	30	28.3
Forestry	17	16.0
Hours Completed Toward Degree		
>111 hours	77	72.6
91-110 hours	26	24.5

Table XVI contains a summary of responses to question numbers 4-9.

TABLE XVI
SUMMARY OF RESPONSES

RESPONSES	N	%
Expect courses to help them plan and/or organize	78	72.6
Expect courses to help them solve problems and make decisions	71	67.0
Expect courses to help them work with people in groups or teams	61	57.5
Expect courses to help them understand the philosophical foundations associated with their major	72	67.0
Expect courses to help them gain a broad perspective of their degree program	70	66.0
Expect courses to explore job opportunities	68	64.2
Evaluation and assessment of the department to offer quality courses	69	63.2

Table XVII categorizes questions 12 through 14, the open-ended questions that asked students what they thought was the most and least valuable things provided by the capstone courses were and if they could change anything about these courses what would they change.

TABLE XVII
SUMMARY OF RESPONDENTS' RESPONSE TO
OPEN-ENDED QUESTIONS

ASPECTS	N	%
Most valuable		
Student Presentations	38	36.2
Applying knowledge to real life situations	23	21.9
Job opportunities	15	14.3
Group participation	12	11.4
Least valuable		
Student presentations	20	31.8
Inadequate discussion of job opportunities	13	20.6
Class meetings	9	14.3
Current issues	8	12.7
Changes desired to be made		
Change course format	17	24.0
Fewer class meetings	14	19.7
Different projects	13	18.3
Change instructor	9	12.7

Conclusions

The following conclusions were obtained based on the major findings:

1. The typical student enrolled in a capstone course within the College of Agricultural Sciences and Natural Resources was a male Agricultural Economics major with more than 91 credit hours completed.
2. A large majority of the students enrolled expected to gain: (a) the ability to plan and/or organize, (b) the ability to solve problems and make decisions, (c) the ability to work with people in groups or teams, (d) an understanding of the philosophical foundations associated with their academic major speciality area, (e) a broad perspective of their degree program.
3. Furthermore, a large majority of the respondents expected the courses to explore job opportunities in their degree.
4. It is further concluded that respondents have a need for academic departments to offer quality capstone courses that draw together their total learning experiences.
5. Generally, it can be concluded that students had a favorable impression of their capstone courses within the College of Agricultural Sciences and Natural Resources.

Recommendations

Based on the conclusions of this study the following recommendations are presented:

1. The capstone courses should continue to be offered within the Departments covered in this study.
2. The Departments that do not have designated capstone courses should revisit the idea of offering such a course.
3. All Departments mentioned in this study should review their curriculum to ensure that it is drawing together the students' total learning experience.
4. Instructors are encouraged to review the comments listed in this study for suggestions within their capstone courses.

Recommendations for Additional Research

The following recommendations are made with regard to additional research. The recommendations are judgments based on having conducted the study and on the examination of the findings of the study.

1. A similar study should be conducted university-wide in order to assess student perceptions and expectations of capstone courses in colleges other than that of the College of Agricultural Sciences and Natural Resources.

2. A study should be conducted that involves a review of the curriculum and instructors of capstone courses.
3. A long range study should be conducted that compares capstone courses.
4. A comparison study should be conducted that looks at non-course type capstone experiences, for example student teaching and portfolios.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE

Student Questionnaire

41

1. What is your major? (Check only one)

- ☐ (1) Agricultural Communications
- ☐ (2) Agricultural Economics
- ☐ (3) Agricultural Education
- ☐ (4) Agricultural Engineering
- ☐ (5) Agriculture (General)
- ☐ (6) Agronomy
- ☐ (7) Animal Science
- ☐ (8) Biochemistry
- ☐ (9) Entomology
- ☐ (10) Forestry
- ☐ (11) Horticulture
- ☐ (12) Landscape Architecture
- ☐ (13) Landscape Contracting
- ☐ (14) Pre-veterinary Science

2. What is your gender?

- ☐ (1) Female
- ☐ (2) Male

3. How many hours have you completed toward your degree program?

- ☐ (1) 1-45 hours
- ☐ (2) 46-60 hours
- ☐ (3) 61-90 hours
- ☐ (4) 91-110 hours
- ☐ (5) >111 hours

Through this capstone course have you or do you expect to...

- | | YES (1) | NO (2) |
|--|--------------------------|--------------------------|
| 4. ...gain the ability to plan, and/or organize? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. ...solve problems and make decisions? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. ...gain the ability to work with people in groups or teams? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. ...gain an understanding of the philosophical foundations associated with your academic major specialty area? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. ...gain a broad perspective of your degree program? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. ...explore job opportunities in your degree? | <input type="checkbox"/> | <input type="checkbox"/> |

Student Questionnaire

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10. Compared to the other coursework in your degree program, how would you rate this capstone course?

- ☐ (1) more effective
- ☐ (2) effective
- ☐ (3) no different
- ☐ (4) ineffective
- ☐ (5) totally ineffective

11. Do you believe your academic department offers a quality capstone course that draws together your total learning experience?

- ☐ YES
- ☐ NO

12. What do you expect to be the most valuable thing provided by this capstone course?

13. What do you expect to be the least valuable thing provided by this capstone course?

14. If you could change anything about this capstone course, what would it be?

Additional Comments. Thank you.

APPENDIX B

CONSENT FORM

Oral Consent

This questionnaire is part of a research project designed to determine the effectiveness of capstone courses as perceived by selected undergraduate students within the College of Agricultural Sciences and Natural Resources at Oklahoma State University. You have been especially selected to be included in this research effort because you are enrolled in a capstone course this semester. We value your opinion and want to know what you think. Your input will be considered with regard to the future of capstone courses within your major area of studies.

The questionnaire should require less than 10 minutes of your time. Please complete the questionnaire and return it to the instructor or researcher as appropriate.

Please be assured that your responses will remain anonymous and will be included as a part of the total findings of this research effort.

Thank you for your attention to this request.

APPENDIX C

QUALITATIVE RESPONSES TO

QUESTION #12

The students were asked what they expected to be the most valuable thing provided by their capstone course. The following responses are reported verbatim as indicated on the questionnaire.

"Discussing both views of an issue"

"Talking to people"

"Interaction with others"

"How to present information"

"How to give individual research report presentations"

"The ability to talk in front of others for a period of time"

"Some insights from various people employed in the Agricultural Industry"

"The stressed importance of research is the most valuable lesson taught in the capstone course"

"A few interesting speakers"

"An instructor who is a good person"

"Gain the ability to speak in front of groups"

"Be objective when confronted with opposing issues directed towards what I have learned in my college career"

"Getting in front of people"

"Ability to speak in front of people"

"Speaking in front of people"

"Learning to work with others within a group"

"Public speaking, guest speakers"

"Being open minded on many different issues"

"Public speaking"

"Be able to put together a presentation"

- "Learn to work as a team member"
- "The opportunity to give an individual and group presentation"
- "The ability to search for needed material when researching a topic"
- "Opportunity for discussion of current topics of interest"
- "Gave me the ability to expand my public speaking"
- "Working with other students and also conveying information to others in our speeches"
- "Having speakers come in and talk to us"
- "Ability to find research and interpret it"
- "Gaining ability to organize and speak publicly"
- "It allowed me to become a more effective speaker"
- "Making us speak in front of groups"
- "Research for Presentations"
- "Hear guest speakers from a wide variety of groups"
- "Public speaking experience"
- "Utilization of previous coursework"
- "The opportunity to work with people"
- "Working with groups and putting ideas together to find a better solution"
- "It allows you to deal with real clients in a real situation"
- "The ability to speak in front of people"
- "To learn to make the best quality decisions, based on acquired knowledge"
- "To get a taste of real life work situations"
- "A true taste of the professional work world, good points and bad points included"
- "How to manage time"

"Responsibility to get things done in our own time and in our own way"

"The opportunity to work on a 'valid' resource with a creditable client"

"Seeing and accomplishing an actual project"

"It allows us to draw upon all the knowledge we have gained and utilize it in a real world situation"

"Realistic experience"

"The ability to work as a group toward a common goal"

"Gave me the opportunity to solve a problem and still have guidelines and knowledgeable people to fall back on for advice"

"Able to find out whether or not I can perform the tasks that my major requires"

"It would probably be the combining of everything I have learned. Taking everything and putting it to work in the course"

"Applying what we have learned toward getting a job and the professional field"

"The range of a full project is seen from meeting clientel to finish construction documents"

"Design practice/exposure to design methods"

"Ability to use the imagination to identify, analyze, and solve problems in the landscape"

"Design a project by the knowledge gained from other courses"

"Integrating several aspects of our major"

"Public speaking"

"Public speaking"

"Nothing"

"Public speaking"

"Experience of speaking in front of a group"

"Giving a presentation and explaining the economics that we've learned"

"The last day"

"Talking in front of a group of people"

"The ability to take our own personal agriculture interests and apply our economic knowledge to analyze them"

"Being updated on job interviews"

"Continuing identification of companies coming to campus to interview"

"Experience speaking in front of group"

"Public speaking"

"Help with the ability to speak in front of a group of people"

"Teaching how to apply all the economic principles"

"Experience in public speaking"

"The opportunity to listen to guest speakers"

"Interaction with classmates"

"The experience of applying classroom theory with actual situations"

"Be able to present a problem to a group"

"How to speak in front of others"

"Public speaking"

"Learn to solve problems"

"The last day"

"Learning about job opportunities"

"One hour credit"

"One hour credit"

"Knowledge of upcoming jobs"

"The experience of giving a presentation, similar to what you would do on the job"

"List of interviewers coming to campus"

"Know how to prepare my resume and approach potential employers"

"The ability to give a good presentation in front of peers, and prepare for employment"

"Group peer communication"

"The ability to collect and organize information already acquired and put it together for a presentation. Also, knowing when job interviews are"

"Gain an understanding of the philosophical foundations associated with my academic major"

"The ability to bring all the theory learned and apply it to the real world"

"Communication skills"

"Presenting speech in front of class"

"Giving the speech and preparing for it"

"Confidence in myself"

"Job opportunities information"

"Gets students thinking about finding a job instead of waiting until the last minute"

"Clarification of things missed along the way"

"Public speaking skills"

"Understanding of economic analysis methods"

"Experience on public speaking"

"Being able to speak in front of peers"

"Three hours of credit"

"Knowledge or ability to integrate or start integrating information gained in coursework"

"Insect identification and classification as well as an economic understanding of their control and damage"

APPENDIX D

QUALITATIVE RESPONSES TO

QUESTION #13

The students were asked what they expected to be the least valuable thing provided by their capstone course. The following responses are reported verbatim as indicated on the questionnaire.

"Research"

"Writing on guest speakers topics"

"Group presentation"

"The listening to classical music"

"Giving presentations seem to be worthless for those who are already proficient in it"

"The capstone class is three hours of busy work that could use improvement in focusing on careers in agriculture"

"Other than interesting speakers, I found everything of little to no value"

"Writing papers over guest speakers"

"Individual presentations"

"Listening to classical music"

"Researching topics"

"Group projects"

"Additional writings"

"All the papers"

"The public speaking-I don't think you should have to do it"

"Writing papers over guest speakers"

"Too little discussion towards later part of semester, in classroom about present issues"

"Group presentation: could have been a simple discussion"

"I think certain questions should not be asked, if they are directed to make the presenter look bad or embarrass them"

"Nothing really. It was a very worthwhile class"

"Giving group and individual presentations are a big help"

"This course is supposed to be a culmination of our previous coursework and I don't feel it does that"

"Having to listen to the presentations that I have little interest in"

"Learning how to work with others"

"There is no way to really do bad in the course unless you don't apply yourself"

"The ability to work with others"

"I think it's all valuable"

"Can't rank, it all seems very valuable. I guess it sort of bothers me that some clients may get a "half-baked" job done on their project because we are just still students (at least some treat it that way)"

"The course didn't have the area that I'm interested in"

"The cost of arranging project meetings at the site during school"

"Evaluation of the course"

"Class meetings"

"A grade in the class"

"The opportunity to spend my own money on it after I paid tuition"

"I'm really there yet but probably if communication to the people outside the major could increase, it would be valuable"

"The projects are very limited. We only get to work on the projects the department gets. I'd like to see a cutting edge project given"

"At times a negative attitude"

"Working with others"

"I don't know"

"Wasted time"

"Attending class"

"Time wasted"

"The time I spent in class"

"Having to listen to others give presentations"

"Nothing"

"Job seeking opportunities"

"Research for the paper and presentation"

"There wasn't participation after doing my paper and presentation. There seemed to be no motivation to attend anymore classes"

"Cost of the course, waste of time"

"It is worthless"

"Time spent"

"Hearing speeches on things I'm not interested in"

"The outline of the course was not sufficient"

"The tips about interviews"

"Only one opportunity for a whole semester"

"Gain the ability to plan/organize"

"Planning and writing papers"

"Having to take it because it is more of a problem to go to and do than what is learned"

"Repeat of information"

"The teaching of things we should have mastered as freshmen, etc"

"Having to listen to all these sometimes uninteresting speeches"

"Total waste of time and money"

"The writing of reports. I expected to learn more about how to use my degree"

"Perhaps getting too specific on certain points"

"Since I plan to go on into the Medical and Veterinary field of Entomology I will probably not use a lot of the methods and formulations in this course, but I do believe it has given me a good solid background in Entomology"

APPENDIX E

QUALITATIVE RESPONSES TO

QUESTION #14

The students were asked if they could change anything about this capstone course, what would it be. The following responses are reported verbatim as indicated on the questionnaire.

"Discuss more about interviewing and resumes"

"Less writing"

"Job opportunities to be discussed"

"Don't do group presentations"

"Have more in-depth discussions"

"Who I sit by"

"I would cancel it. Other courses that I feel more worthwhile have been eliminated. These classes could be offered once again"

"The class would be better if taught by the instructor in an informative format of the broad implications of agriculture"

"Make it an elective instead of required"

"Do away with one of the presentations and have more guest speakers"

"Directed towards areas of job opportunities"

"Have two group presentations instead of one"

"Shorter labs"

"The group project"

"More group discussion on current issues"

"More homework and less emphasis on speaking"

"Less busy work"

"Not make it a required course"

"More variety of topics of the guest lecturers"

"The emphasis placed on research articles. We've spent nearly half the semester listening to fellow students portray research projects"

"Option for two individual presentations"

"The questions asked should be more structured"

"I might make the individual presentations longer so that you can give more information to the class"

"I would gear it more toward a 'gathering' of our courses; a summary of our degree program"

"Have the course focus more on discussion"

"More guest speakers"

"Time. Perhaps expand it to two semesters. Some financial assistance from department"

"To have more deadlines to help move the projects along"

"I would like two semesters of courses such as this one"

"I would have liked the option of a solo project or groups of two instead of four"

"Designated team leaders either by choice of the professor, the team, or volunteer"

"Students should participate in choosing projects. List areas of interest and not be given fixed projects"

"To have it in the fall of the senior year"

"The course is fine. I wouldn't change it"

"Increase the technical requirements or the projects selected"

"Fewer class meetings"

"The cost associated with it"

"That I had a longer time period to work on it"

"Teaching ability of some professors (or lack thereof)"

"I don't know really what needs to be changed"

"Cost involved. They're too high"

"Improve efficiency of classroom time"

"If anything could be changed probably some of the instructors and their attitudes towards students and learning"

"Time"

"Less class meetings"

"Less attendance"

"Not require people to take it"

"Teach us something. One speech is a waste of time"

"The instructor"

"A better outline of what he wants in the presentation"

"Not taking it"

"Not have it. I have not learned any additional knowledge or gained any new experience"

"More reason to attend class"

"Everything. Get a real course"

"Not have it"

"Credit hours"

"Grading on attendance"

"The course does not provide any learning nor does it bring together total learning"

"More assistance on finding a job"

"The instructor"

"Different professor and structure of class"

"It could be more informative about gaining employment"

"Only be made to go to class once in a while"

"Gain a broad perspective of my major"

"It should incorporate teams and overview economic theories learned in other classes like BUSAD 4513"

"Have the project pull more of the areas together. Group project?"

"I would try to have everyone participate in some way everyday, during each class"

"Totally redesign or do away with all together"

"Have a more organized topic area"

"Not having to do a report/presentation and do a group/team project"

"I would like to probe deeper into the realm of the biological control/technology of insects."

APPENDIX F

ADDITIONAL COMMENTS

The students were asked to put any additional comments they wished to make. The following responses are reported verbatim as indicated on the questionnaire.

"Good course, but not what I had expected. Need to bring in more opposing viewpoints"

"The capstone course here at OSU in its present format appears to be a three hour filler course and doesn't seem to be as informative as I had hoped. It's more of a speech class than anything else"

"I learned far more from going to the library and having to use 'PETE' than I did from capstone. Make a 'PETE' course and other library computer systems a requirement for freshmen and transfer students. But it's too late to benefit from 'Pete' since I'm leaving"

"Instead of presentations, students should be assigned 'real world' problems to solve in order to better tie together their previous classes"

"I wish we would have had more controversial and motivational speakers"

"Very good course and a very good teacher"

"Good class. Dr. Buchanan is a good teacher"

"Working with the Speech Department on oral presentations was very effective and helpful"

"Great capstone course. Doesn't let off easy"

"This course was more time consuming and costly then lead on. Definitely more expensive than an ordinary class and much more time involved"

"Sometimes I think this is a waste of time"

"Drop this course"

"I interviewed a banker in my county who said this class was worthless ten years ago and it still is today"

"Poor class. Could be reorganized to be beneficial"

"Thank you"

"This course is sometimes hard to come to"

"I think it is also important that people (especially in my field and others like it) know how to obtain information on certain topics and who contact points are for when they are at their job, etc. But, maybe that area is helped by employers"

"This course has offered me a chance to strengthen my background in Entomology and I believe it will help me relate to other areas of the field I should encounter"

VITA

Melinda Carolyn Courtney Fruendt

Candidate for the Degree of

Master of Science

**Thesis: AN ANALYSIS OF STUDENT PERCEPTIONS AND EXPECTATIONS
OF CAPSTONE COURSES IN THE COLLEGE OF AGRICULTURAL
SCIENCES AND NATURAL RESOURCES**

Major Field: Agricultural Education

Biographical Data:

Personal Data: Born in Pryor, Oklahoma, September 19, 1970, the daughter of John and Aletha Courtney.

Educational: Graduated from Chouteau High School, Chouteau, Oklahoma, May 1988, graduated from Oklahoma State University, Stillwater, Oklahoma, May 1993, with a Bachelor of Science degree in Agricultural Education, completed requirements for the Master of Science degree in Agricultural Education, Oklahoma State University in July, 1994.

Organizations: FFA, 1984-1988; Collegiate FFA, 1989-1993; Alpha Tau Alpha, 1992-1993; Alpha Zeta, 1992-present.

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 02-28-94

IRB#: AG-94-017

Proposal Title: AN ANALYSIS OF UNDERGRADUATE STUDENT PERCEPTIONS
OF CAPSTONE EXPERIENCES IN THE COLLEGE OF AGRICULTURAL SCIENCES
AND NATURAL RESOURCES

Principal Investigator(s): ~~Dr. William Weeks~~, Melinda Fruendt

Reviewed and Processed as: Exempt

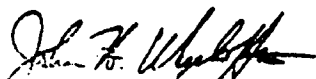
Approval Status Recommended by Reviewer(s): ~~Approved~~

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT
MEETING.

APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR
RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL. ANY MODIFICATIONS
TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for
Deferral or Disapproval are as follows:

Signature:



Chair of Institutional Review Board

Date: March 1, 1994